Partner Test Guide

To accompany ECHO Version 8.0/Mindreef SoapScope
September 2006

Contents

Figures

Preface

Current ECHO Partners have been familiar with using the ECHO "Test Harness" to test ECHO queries, and to perform testing on client applications while in development. The Test Harness is accessible via the web, and provides an open-ended text field, into which the user would copy XML-formatted code. This interface provides a powerful access to test the API—if you know what you're doing.

The "Test Harness," however, operates against the ECHO 7.0 API. While this API and interface will continue to be available as an alternative to the latest ECHO v.8.0 Web Services API, it is scheduled to "go away" when ECHO v. 9.0 is released (scheduled for the spring of 2007). ECHO Operations, therefore, is strongly recommending that Partners transition as quickly as possible to the v.8.0 Web Services API. Along with this transition comes a new interface for testing ECHO queries and API calls.

ECHO Operations has purchased Mindreef SoapScope. SOAPScope® is an award-winning diagnostic and testing tool that helps developers, testers, support engineers and consultants solve Web services problems quickly, and provides a web-based graphical interface to access the ECHO WebServices API.

This document is intended to provide an introduction and overview for using ECHO's SOAPScope Community Pages to interact with the ECHO Webservices API. It is not intended to be an exhaustive "SOAPScope Users Guide" or even an exhaustive description of all the ways to user the SOAPScope interface to test ECHO, but rather an introduction to the interface to allow Partners to "get their feet wet". As such, it provides an overview of the interface in general, and covers logging into the system, and performing basic queries in detail.

Conventions

- All references to time are in Universal Time Coordinated (UTC).
- Keywords or development related terms are indicated using **bold text**.
- Core ECHO concepts are indicated using *italicized text*.

- `Programming examples use a fixed width font.`

---

1 Introduction to the ECHO SOAPScope Community Interface

ECHO Partners will access the ECHO Mindreef SOAPScope server through the Community Page. This access allows Partners to access the entire ECHO v.8.0 Webservices API, with permissions limited by ECHO account access.

> *Note: For security reasons, access to the ECHO Mindreef SOAPScope server is allowed only to approve IP addresses. Therefore, before trying to use the Partner Test/SOAPScope site, users will need to contact ECHO Operations (echo@killians.gsfc.nasa.gov) and request that their IP be permitted access.*

> *Note: Anonymous access is available through a "guest" user account. Users who login as "guest" are restricted to a subset of the API (e.g., basic queries); while users with an authenticated ECHO username and password can perform any action allowed to that account. The entire API is visible to all users, but an attempt to perform a restricted operation will result in an error message.*

Accessing the ECHO SOAPScope Community Page

Once access to the ECHO SOAPScope server has been granted to their IP address (see Note above), Partners may access the Community Page at the following URL (see Figure 1):

```
http://129.165.194.187:8103/sos/v/comm/work/8405BD61-9B39-AEA2-9695-FFBC77416918/contractList
```

URL for ECHO SOAPScope Community Page

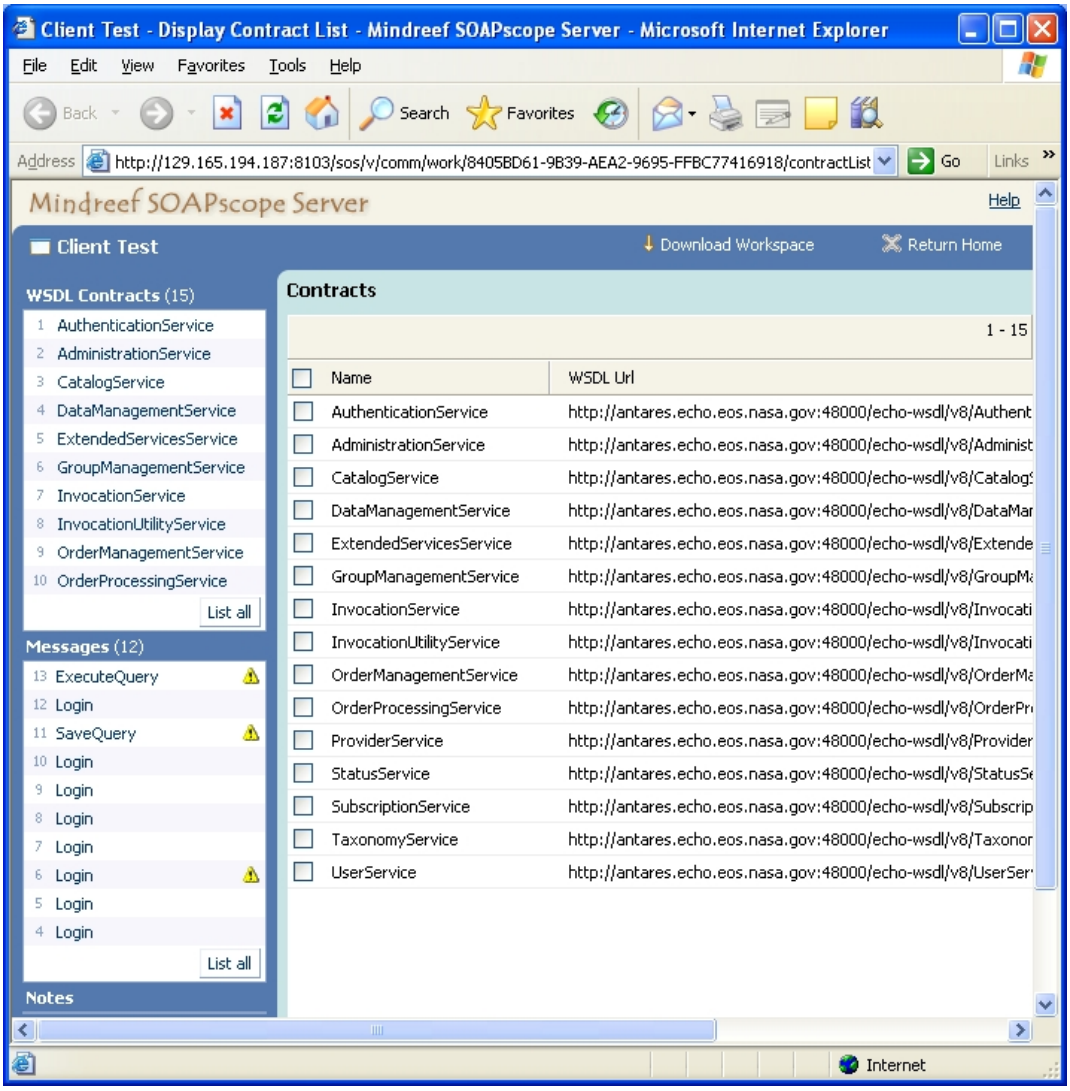

Figure 1. ECHO SOAPScope Community Page

Overview of the Community Page Interface

Partners may explore the ECHO API by clicking on any of the items in the **WSDL Contracts** list in the left-hand column of the page (or in the list of Contracts that appears on the initial Community Page). Figure 2 shows an example of the **CatalogService** page.

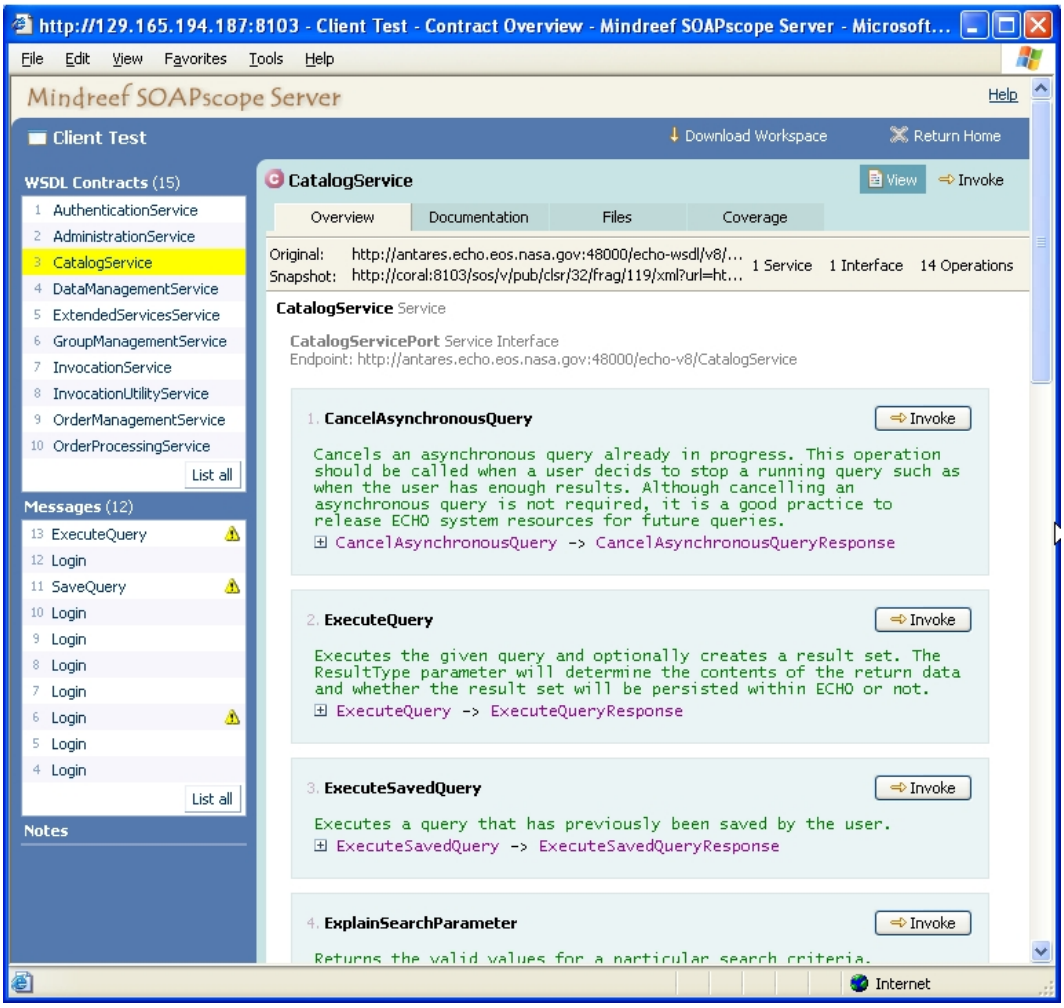

Figure 2. CatalogService Page

Partners may view details related to the selected Service by selecting the various "Tabs" at the top of the page:

Table 1: Service Details Interface

Tab	Description
Overview	The initial page for viewing details of the Service, this page provides a list of operations related to the service, along with a description of the operation. In addition, for each operation, an "Invoke" button appears, allowing the user to perform the operation.

Tab	Description
Documentation	Click on this Tab to view details related to the selected Service. A list of the operations appears. Click on any of the operations to view system Documentation, including Pseudocode, Properties and XML Schema for the selected operation.
Files	Click on this Tab to view a list of the Files associated with the selected Service. Click on any of the files in the list to view the actual contents of the file itself.
Coverage	Click on this Tab to view information related to the performance of the operations associated with the selected service. For example, this table provides details for the Average, Max and Min(in ms) Duration time for performing the ExecuteQuery Operation.

Partners may further explore from the **Service Overview** by clicking the **Invoke** button associated with any of the Operations listed within a service. Figure 3 shows an example of the **ExecuteQuery** Operation (explained in detail in Section 4).

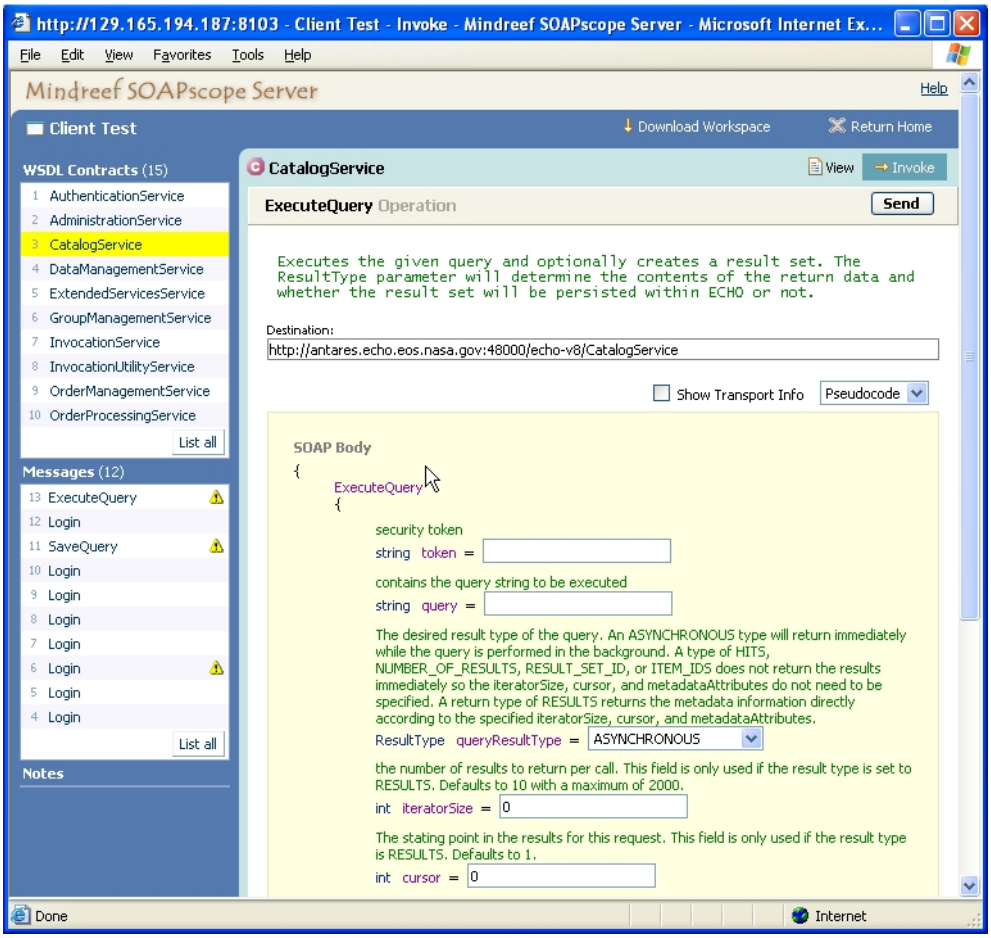

Figure 3. ExecuteQuery Operation

All required parameters for performing the selected Operation are shown with a prompt and an HTML text field to allow the user to provide the required information. For example, one parameter that is required for most operations is the "security token," a string that is provided as a returned value when the user successfully logs into ECHO (see Section 3).

Clearly, the SOAPScope interface provides Partners with a comprehensive view of the ECHO v.8 WebServices API. Detailed instructions for performing typical operations using the ECHO SOAPScope interface are provided in the following sections.

2 Getting Started with ECHO Partner Test through SOAPScope

Overview

In order to make calls against the ECHO webservices API, you must first be logged into ECHO. This section provides information on logging in through the SOAPScope interface, and identifying the Security Token you will use for the rest of your sesson.

> *Note: Anonymous access is available through a "guest" user account. Users who login as "guest" are restricted to a subset of the API (e.g., basic queries); while users with an authenticated ECHO username and password can perform any action allowed to that account.*

How to Log In:

Step	Action	Result
1.	Using your web browser, access the ECHO SOAPScope Community Page (see Section 2).	The ECHO SOAPScope Community Page is displayed (see Section 2, Figure 1).
2.	Select the AuthenticationService by clicking on the item in the list.	The AuthenticationService details are displayed, providing the list of oprations available through that service (see Figure 4).

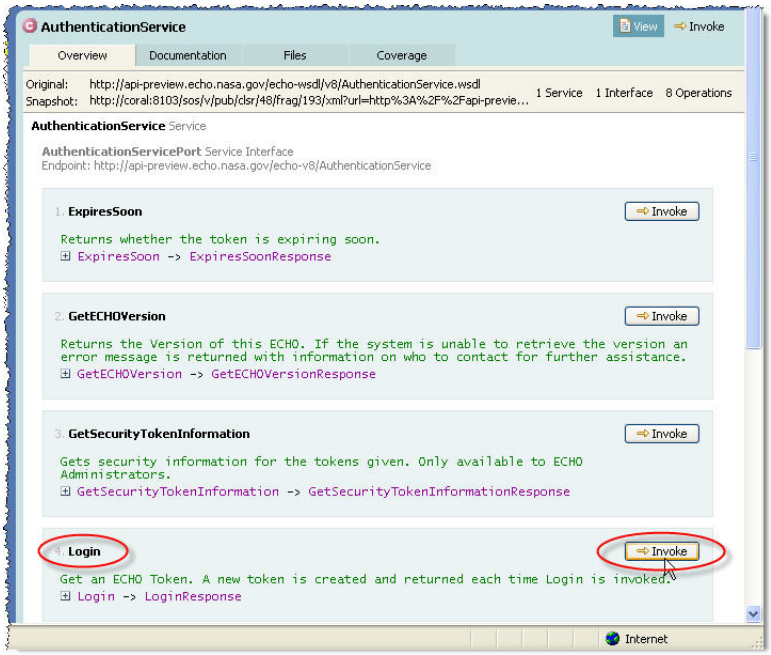

Figure 4. AuthenticationService Page

Step	Action	Result
3.	Locate the Login function (see Figure 4), and click on the Invoke button associated.	The pseudocode for the Login function appears, providing text fields for required values (see Figure 5).

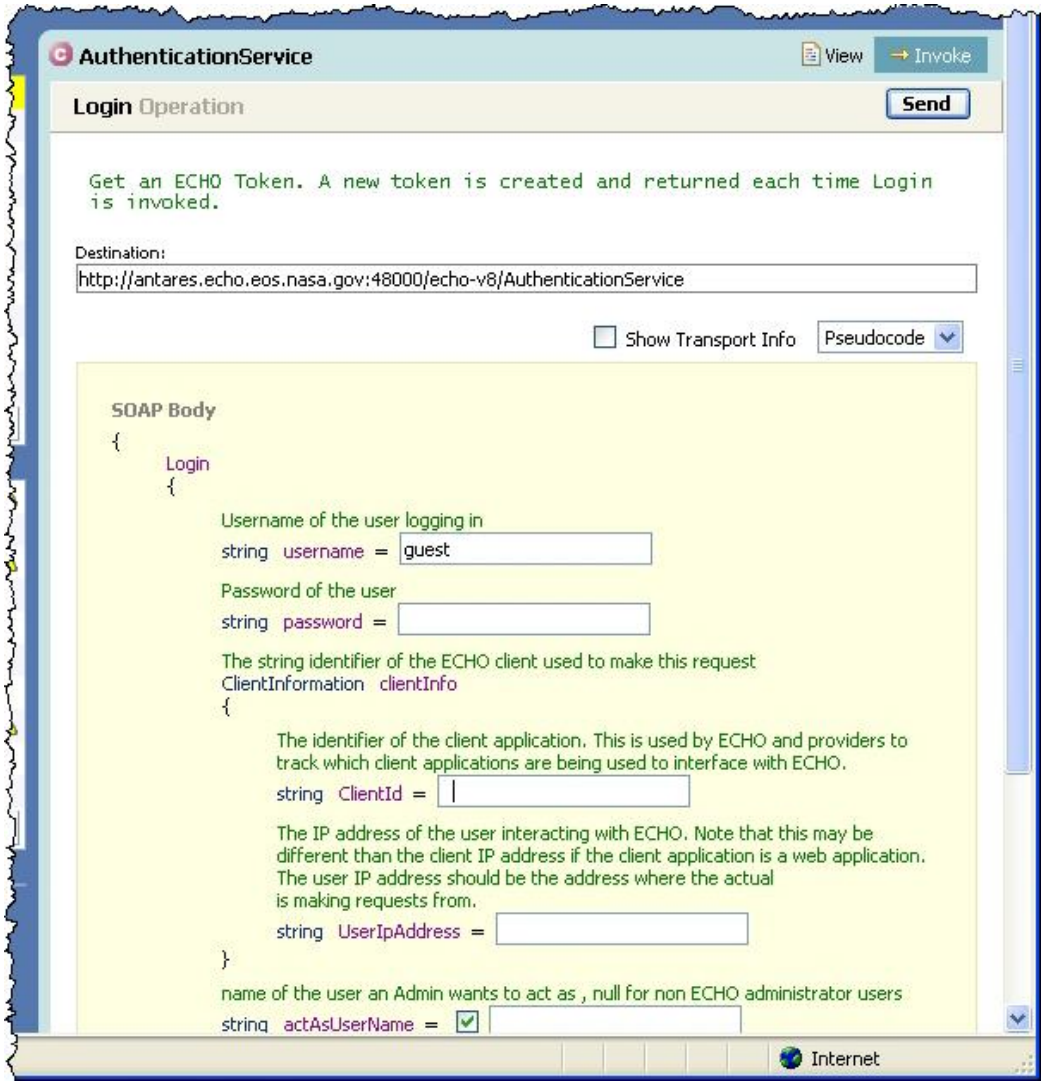

Figure 5. Login Operation Form

4.	Enter the **username**. (If logging in anonymously, enter <guest>)	
5.	Enter the **password**. (If logging in as "guest", no password is required.)	

> ***Note:*** *Be aware that the password is currently displayed in clear text through this interface.*

Step	Action	Result
6.	Enter anything for the **ClientID**.	(Note: this field is required, but the value can be anything).
7.	Click on the **Send** button.	The entered values are submitted against the ECHO WebServices API, and returned values are displayed in the subsequent page (see Figure 6).

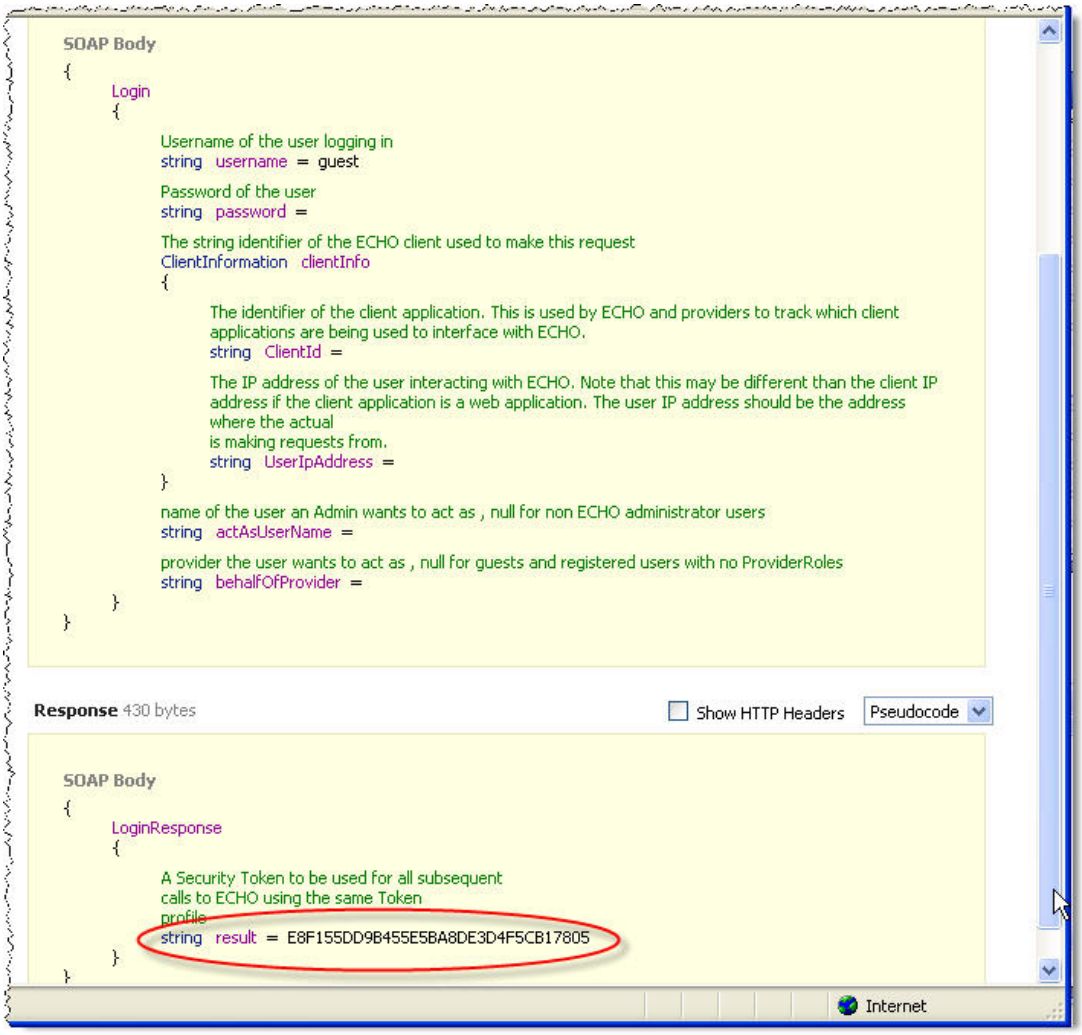

Figure 6. Login Response

> ***NOTE:*** *When you are successfully logged in, a string result appears under LoginResponse, which is the Security Token for this ECHO session. Copy that string to the clipboard, and save (for example in a Notepad file). You will need this Token during this session in order to do anything else through the ECHO Webservices API.*

3 Performing ECHO Queries through ECHO Partner Test

Overview

Queries to the ECHO catalog are performed using the **CatalogService** part of the ECHO v.8.0 Webservices API. The SOAPScope interface handles much of the XML that Partners used to develop for manual use with the ECHO Test Harness, eliminating much of the need to write large amounts of XML to interact with ECHO. The actual query itself, however, must be provided by the user in valid XML syntax.

Code Example 1. A sample basic query:

```
<!DOCTYPE query SYSTEM
"http://antares.echo.eos.nasa.gov:48000/echo/dtd/
IIMSAQLQueryLanguage.dtd"><query><for
value="collections"/><dataCenterId><value>TEST01</value>
</dataCenterId><where/></query>
```

The development of accurate query syntax is discussed in depth in the ECHO v.8 WebServices User Guide, and in other ECHO documentation. The following, however, describes how to use the ECHO SOAPScope Community Interface to perform queries (with the assumption that the query syntax is correct).

3.1 Performing a Basic Query

All users may perform basic queries through the ECHO SOAPScope Interface. Users who login as "guest", however, are restricted to a subset of the API (e.g., basic queries); while users with an authenticated ECHO username and password can perform any action allowed to that account (e.g., saving queries for future use or executing saved queries). The entire API is visible to all users, but an attempt to perform a restricted operation will result in an error message.

> ***NOTE:*** *In order to perform queries, you must first be logged into ECHO. If you are not logged into ECHO or do not know your Security Token for this session, refer to Section 2 for assistance with logging in.*

How Perform a Basic Query:

Step	Action	Result
1.	After logging in, select the **CatalogService** by clicking on the item in the Catalog List in the left-hand column of the ECHO SOAPScope Community Interface.	The **CatalogService** details are displayed, providing the list of oprations available through that service (see Figure 7).

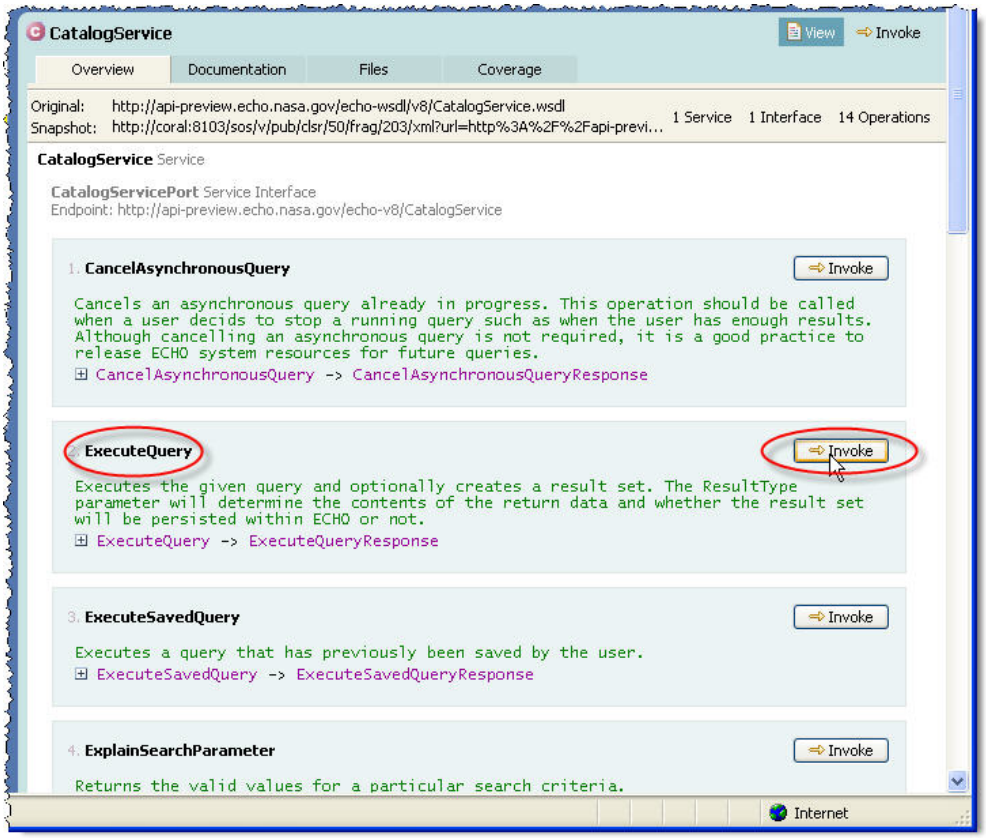

Figure 7. CatalogService page

Step	Action	Result
2.	Locate the **ExecuteQuery** operation, and click on the **Invoke** button associated.	The pseudocode for the **ExecuteQuery** operation appears, providing text fields for required values (see Figure 8).
3.	Enter the Security Token for this session in the **security token** field.	Refer to Section 2 for help with logging in and identifying your security token.

> ***Note:*** *Make sure there are no leading or following spaces in your security token field. Extra spaces will result in an "invalid token" error.*

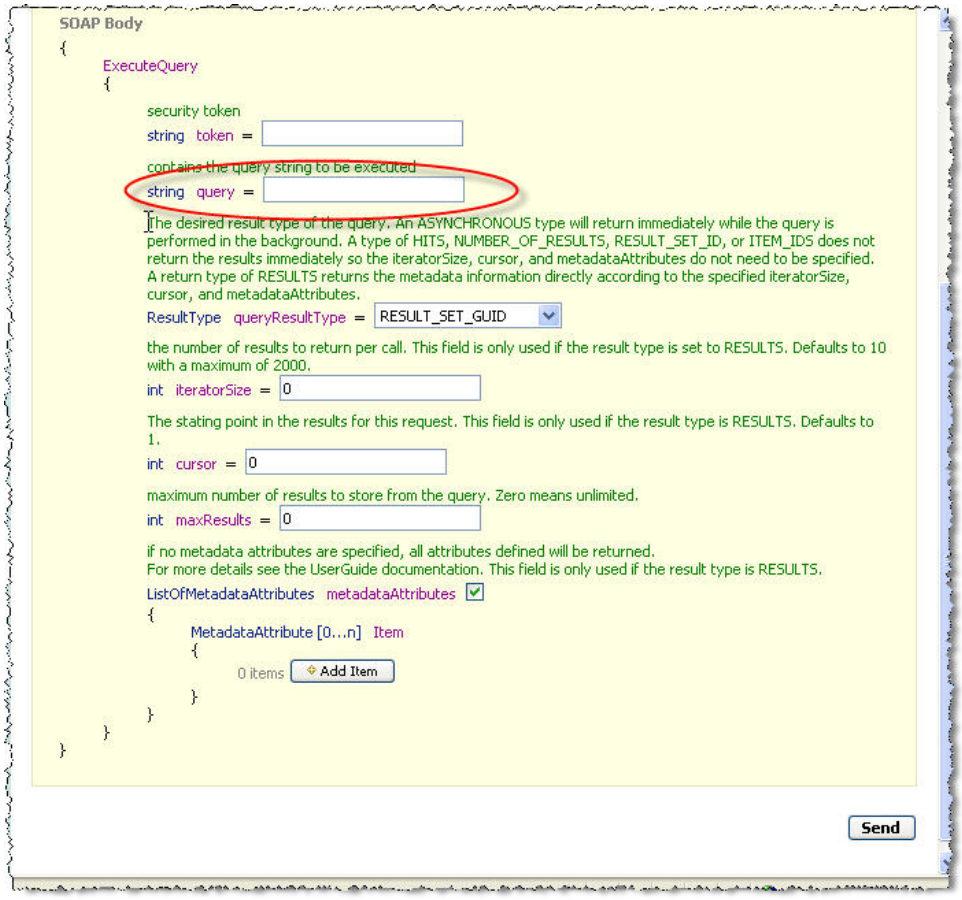

Figure 8. Execute Query Operation

4.	Enter the properly-formatted xml text for your query in the **query** text field.	

> ***Tip****: Make sure there are no "line breaks" in your query syntax. The SOAPScope interface provides a single-line text field for entering the query syntax. Any line breaks will result in incomplete query text.*

Step	Action	Result
5.	Select the type of result you want from the **ResultType** dropdown list. (See Figure 9.)	

> ***Tip:*** *If you don't know how many results you are likely to get, perform the query first using the* ***Hits*** *Result Type. Then perform the query again using the* ***Result*** *Result type to see the actual results.*

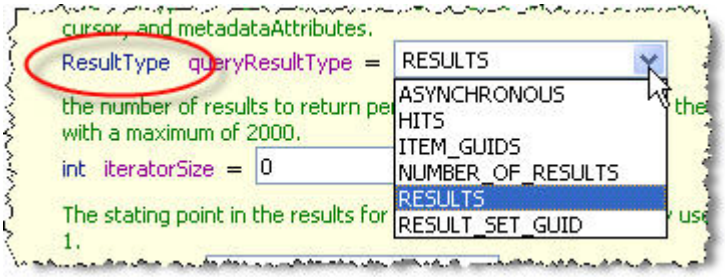

Figure 9. ResultType dropdown

6.	Complete the other fields as necessary.	
7.	Click on the **Send** button to submit the query.	The **ExecuteQuery** results page is displayed (see Figure 10).

Figure 10. ExecuteQuery Response

3.2 Saving a Query

Users authenticated with a valid ECHO login are able to save queries for future use. Just as in the operational ECHO system, queries are saved on a "per user" basis; i.e., one user can not retrieve another user's saved queries.

> *Note: This feature is not available through the "guest" login.*

How Save a Query:

Step	Action	Result
1.	After logging in, select the **CatalogService** by clicking on the item in the Catalog List in the left-hand column of the ECHO SOAPScope Community Interface.	The **CatalogService** details are displayed, providing the list of oprations available through that service (see Figure 7).
2.	Locate the **SaveQuery** operation, and click on the Invoke button associated.	The pseudocode for the **SaveQuery** operation appears, providing text fields for required values (see Figure 11).

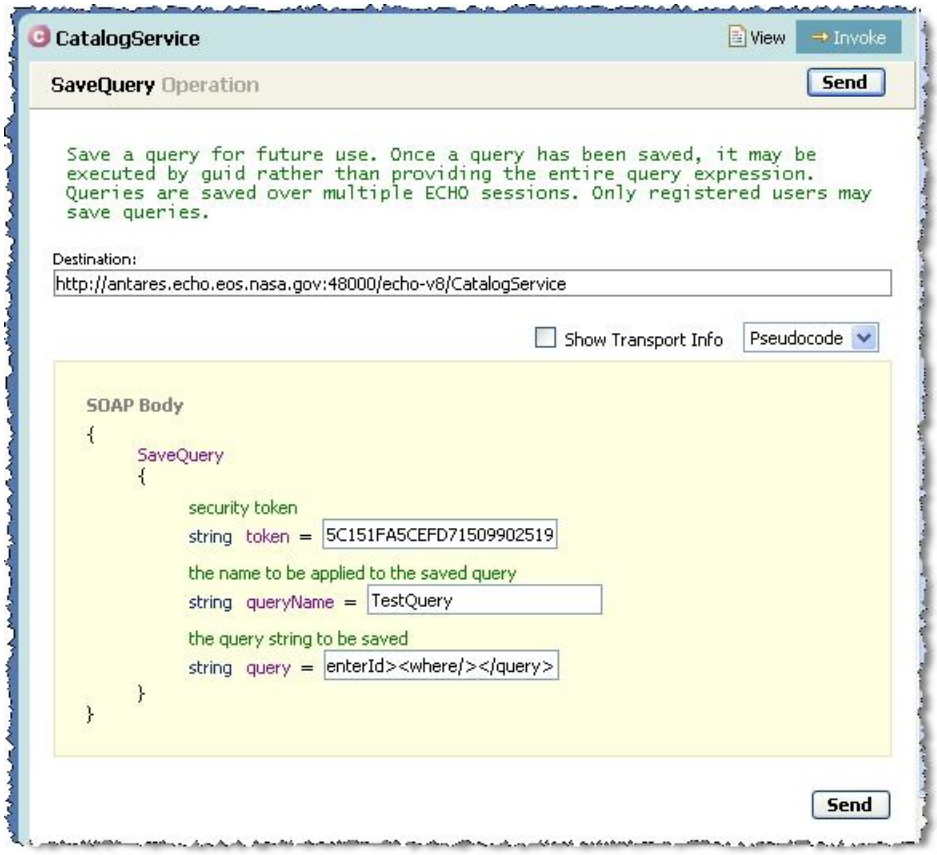

Figure 11. SaveQuery Form

Step	Action	Result
3.	Enter the Security Token for this session in the security token field.	Refer to Section 2 for help with logging in and identifying your security token.

> ***Note:*** *Make sure there are no leading or following spaces in your security token field. Extra spaces will result in an "invalid token" error.*

4.	Enter a name to identify the query in the queryName field.	
5.	Enter the properly-formatted xml text for your query in the query text field.	

> ***Tip****: Make sure there are no "line breaks" in your query syntax. The SOAPScope interface provides a single-line text field for entering the query syntax. Line breaks may result in incomplete query text, and an error.*

6.	Click on the **Send** button to submit the query.	The **SaveQuery** results page is displayed (see Figure 12).

Figure 12. SaveQuery Results

3.3 Executing a Saved Query

In order to execute a previously saved query, you must first be logged into the system with a valid security token, and you must know the name of the query you wish to execute.

- To view a list of available queries, you may use the GetSavedQueryNames operation. This function provides a list of the names of available queries. Refer to Section 3.4
- To see the details (including the query syntax) of one or more queries (for example, if you can't identify the query by its name), use the GetSavedQuery operation. For this function, you must provide the names of the queries you want to view. Refer to Section 3.5

How to Execute a Saved Query:

Step	Action	Result
1.	After logging in, select the **CatalogService** by clicking on the item in the Catalog List in the left-hand column of the ECHO SOAPScope Community Interface.	The **CatalogService** details are displayed, providing the list of oprations available through that service (see Figure 7).
2.	Locate the **ExecuteSavedQuery** operation, and click on the Invoke button associated.	The pseudocode for the **ExecuteSavedQuery** operation appears, providing text fields for required values (see Figure 13).

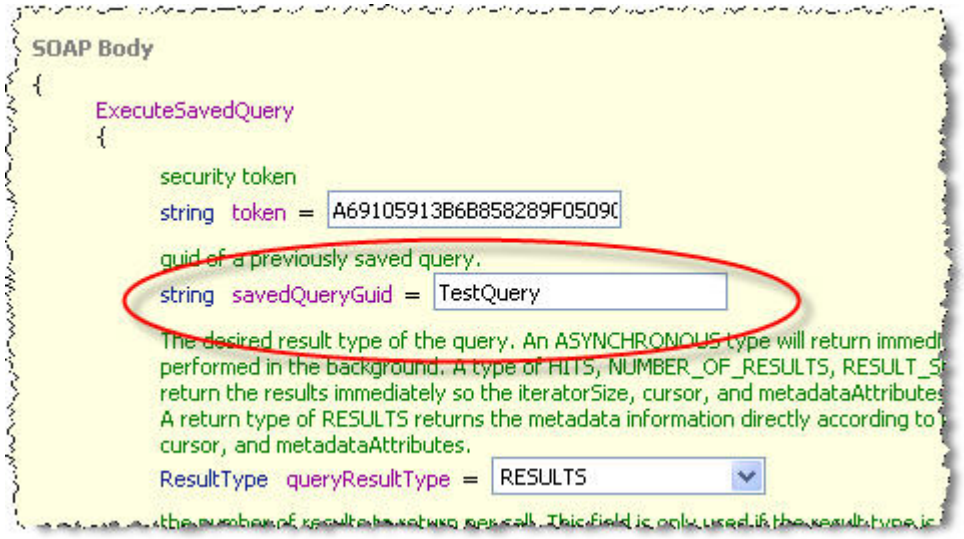

Figure 13. ExecuteSavedQuery Form

Step	Action	Result
3.	Enter the Security Token for this session in the security token field.	Refer to Section 2 for help with logging in and identifying your security token.

> ***Note:*** *Make sure there are no leading or following spaces in your security token field. Extra spaces will result in an "invalid token" error.*

4.	Enter the name to identify the query you want to execute in the **savedQueryGuid** text field.	

> ***Tip****: If you don't know the name of the query you want to execute, use GetSavedQueryNames (see Section 3.4) and, if necessary, GetSavedQueries (see Section 3.5).*

5.	Click on the **Send** button to submit the query.	The **ExecuteSavedQuery** results page is displayed (see Figure 14).

Figure 14. ExecuteSavedQuery Results

3.4 Viewing a List of Saved Queries

Working with Saved Queries using the ECHO SOAPScope interface almost always requires you to know the name of the query you want to use. There is no way to, for example, select a query from an automatically generated list. You can, however, use the ECHO Webservices API to look up a list of all available saved queries.

> ***Note:*** *Saved Queries are only available on a per-user basis. I.e., each user can only see the queries saved while logged into the same account he/she is using.*

How to View a List of Saved Queries:

Step	Action	Result
1.	After logging in, select the **CatalogService** by clicking on the item in the Catalog List in the left-hand column of the ECHO SOAPScope Community Interface.	The **CatalogService** details are displayed, providing the list of oprations available through that service (see Figure 7).
2.	Locate the **GetSavedQueryNames** operation, and click on the Invoke button associated.	The pseudocode for the **GetSavedQueryNames** operation appears, providing text fields for required values (see Figure 15).

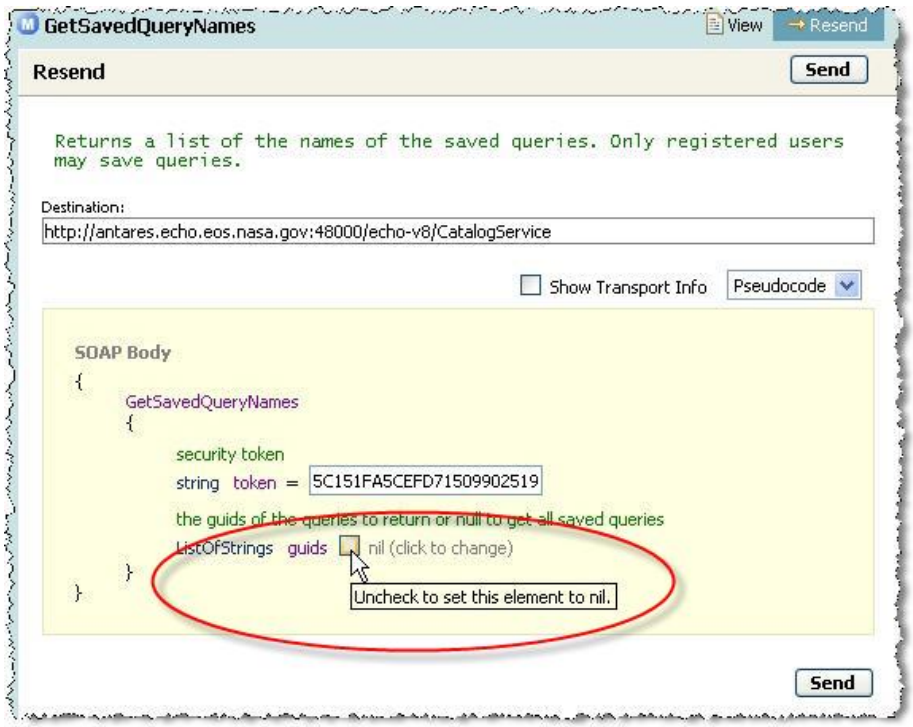

Figure 15. GetSavedQueryNames Form

Step	Action	Result
3.	Enter the Security Token for this session in the **security token** field.	Refer to Section 2 for help with logging in and identifying your security token.

> ***Note:*** *Make sure there are no leading or following spaces in your security token field. Extra spaces will result in an "invalid token" error.*

4.	"Uncheck" the **guids** checkbox, to retrieve the list of all available queries.	
5.	Click on the **Send** button to submit.	The **GetSavedQueryNames** results page is displayed (see Figure 16).

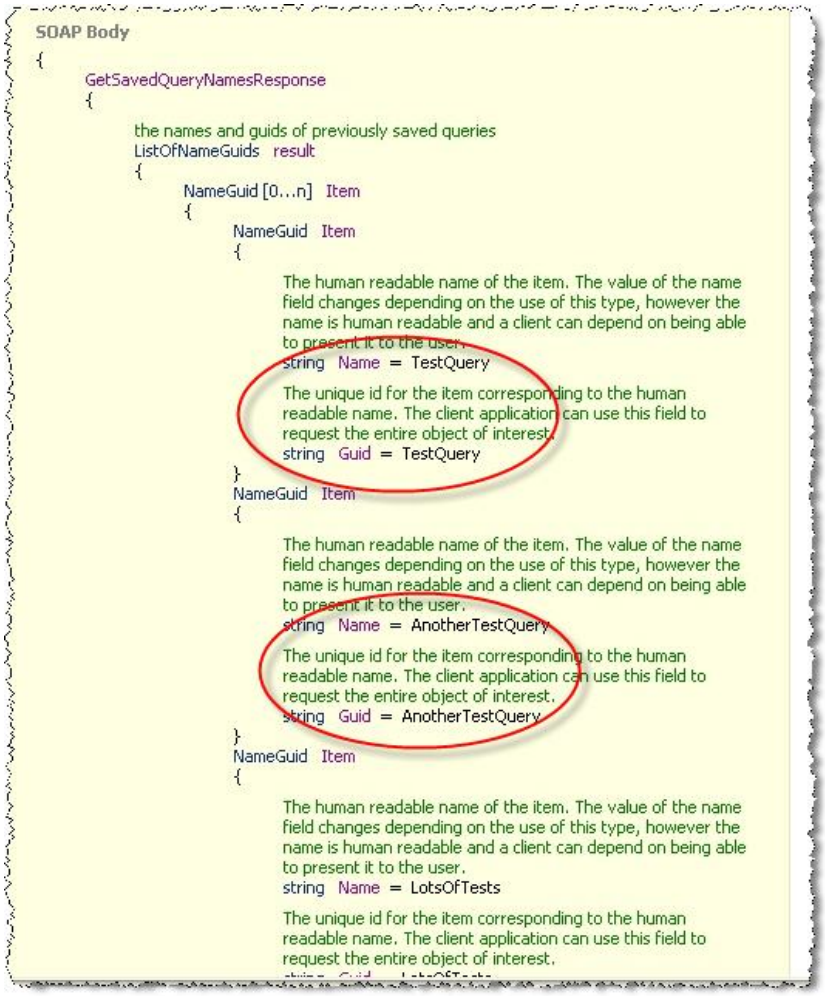

Figure 16. GetSavedQueryNames Results

3.5 Viewing the Details of Saved Queries

How to View the Details of One or More Saved Queries:

Step	Action	Result
1.	After logging in, select the **CatalogService** by clicking on the item in the Catalog List in the left-hand column of the ECHO SOAPScope Community Interface.	The **CatalogService** details are displayed, providing the list of oprations available through that service (see Figure 7).
2.	Locate the **GetSavedQueries** operation, and click on the Invoke button associated.	The pseudocode for the **GetSavedQueries** operation appears, providing text fields for required values (see Figure 17).

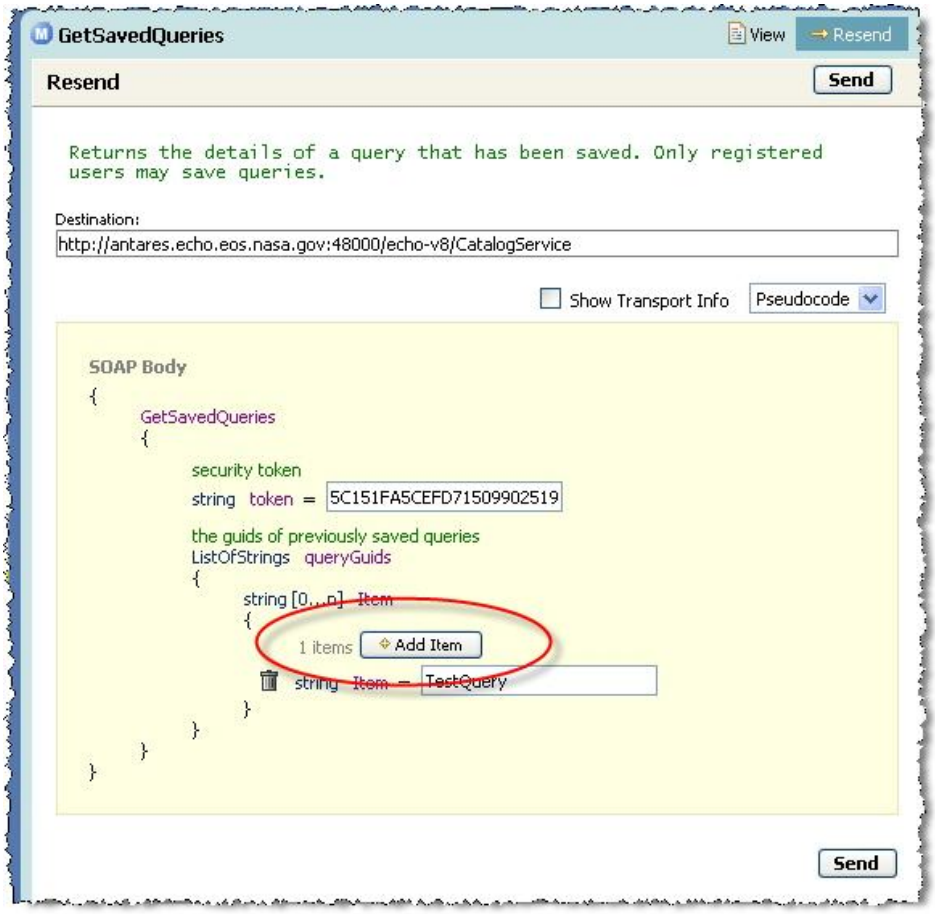

Figure 17. GetSavedQueries Form

3.	Enter the Security Token for this session in the **security token** field.	Refer to Section 2 for help with logging in and identifying your security token.

> ***Note:*** *Make sure there are no leading or following spaces in your security token field. Extra spaces will result in an "invalid token" error.*

Step	Action	Result
4.	Click on the **Add Item** button. (Repeat for each query as required.)	A text field prompt is displayed. (See Figure 18.)
5.	For each query, enter the query name into an **Item** text field.	

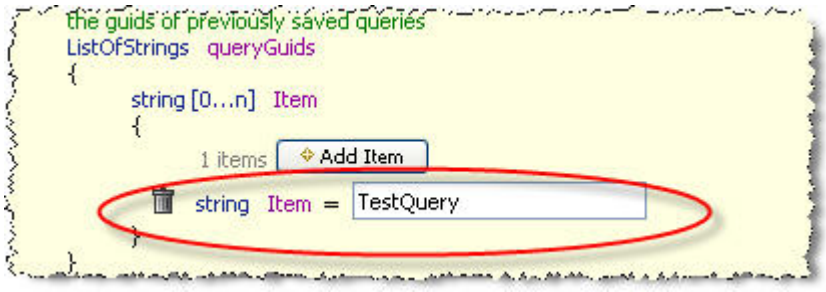

Figure 18. GetSavedQueries Item field

6.	Click on the **Send** button to submit.	The **GetSavedQueryNames** results page is displayed (see Figure 19).

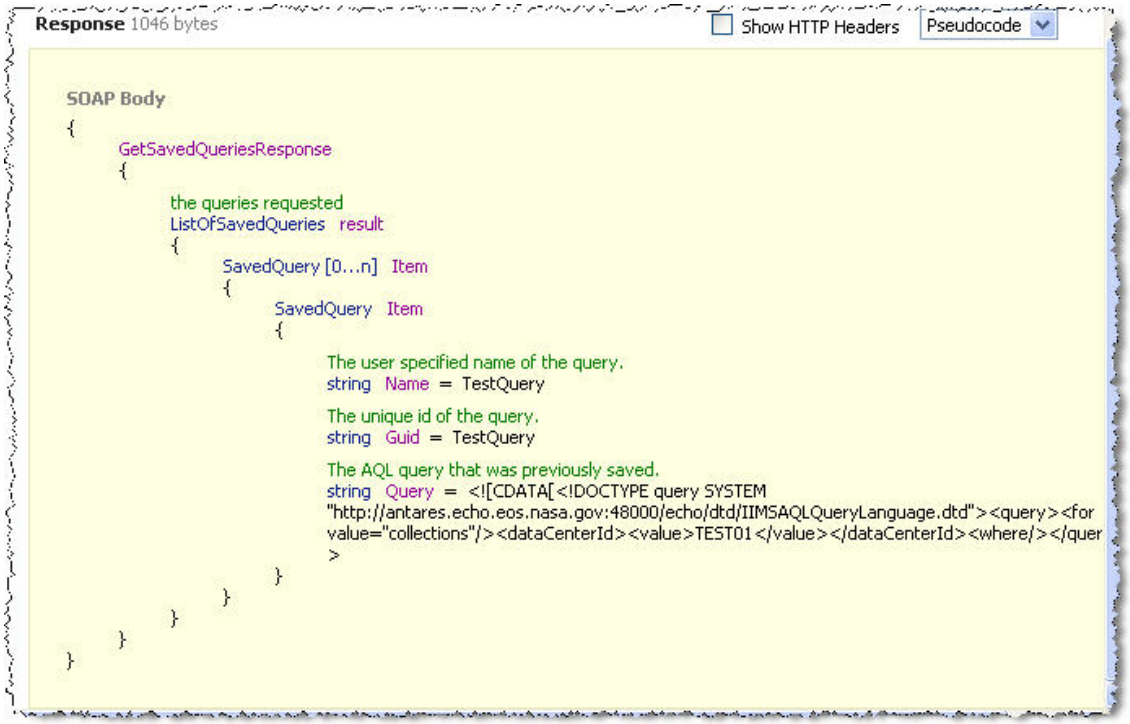

Figure 19. GetSavedQueries Response

3.6 Saving A Results Set

Users authenticated with a valid ECHO login are able to save the results of a query for future use. Just as in the operational ECHO system, query results are saved on a "per user" basis; i.e., one user can not retrieve another user's saved queries.

> ***Note**: This feature is not available through the "guest" login.*

> *Tip: In order to save a results set, you will need to provide the **ResultsSetGuid** (the global unique identifier that ECHO associates with that results set). This value is located on the query results page, near the beginning of the **Response** section.*

How to Save a Results Set:

Step	Action	Result
1.	After logging in, select the **CatalogService** by clicking on the item in the Catalog List in the left-hand column of the ECHO SOAPScope Community Interface.	The **CatalogService** details are displayed, providing the list of oprations available through that service (see Figure 7).
2.	Locate the **SaveResultsSets** operation, and click on the **Invoke** button associated.	The pseudocode for the **SaveResultsSets** operation appears, providing text fields for required values (see Figure 20).

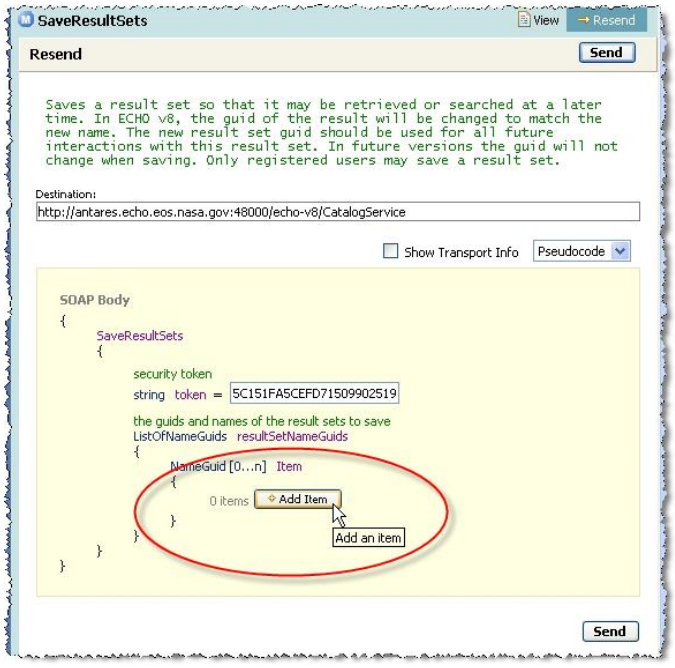

Figure 20. SaveResultsSet Form

Step	Action	Result
3.	Click on the **Add Item** button.	Two fields are displayed to allow you to identify the results you want to save (see Figure 21).

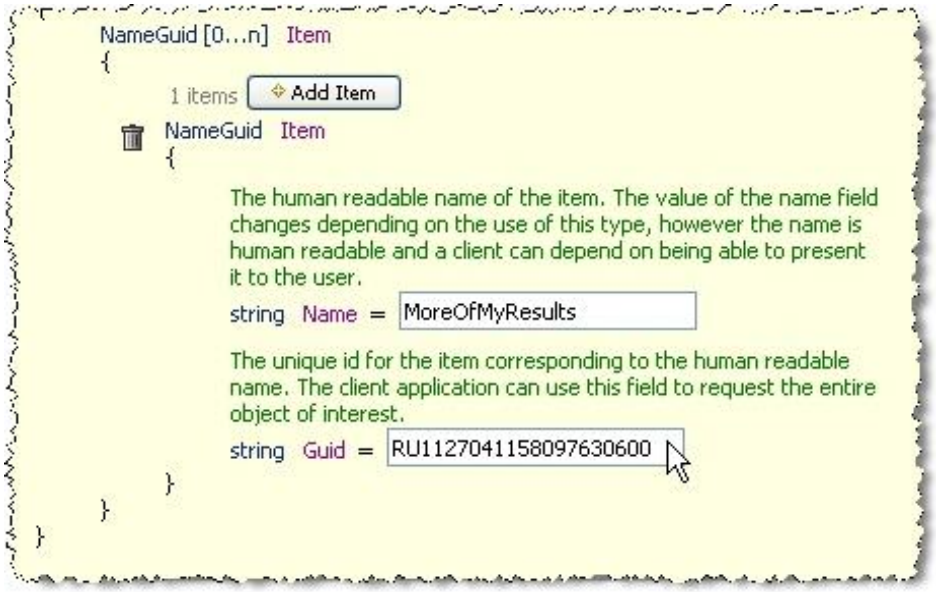

Figure 21. SaveResultsSet Form, with Guid fields

4.	Enter a "human readable" name in the **Name** field.	
5.	Enter the **Guid** for the response you want to save. This value can be found on the query results page, near the top of the results section (see Figure 22).	

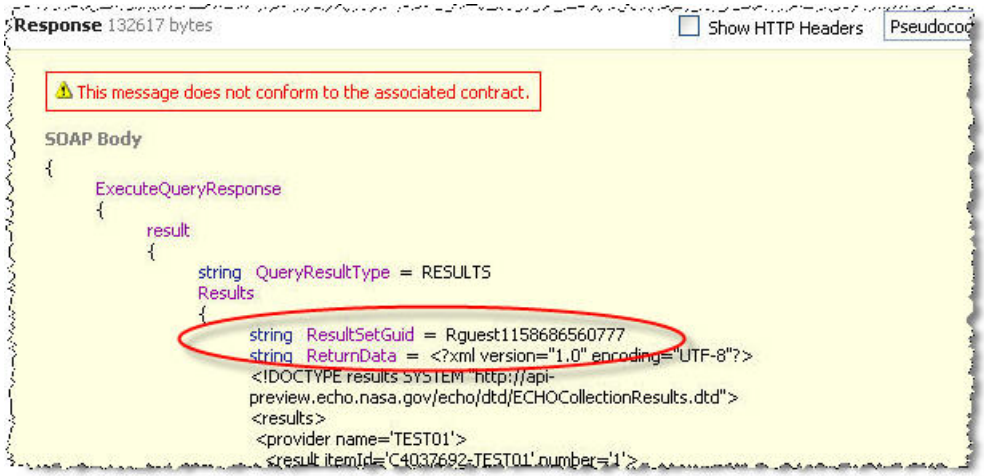

Figure 22. ResultSetGuid (Query Results)

Step	Action	Result
6.	Click on the **Send** button to submit.	The **SaveResultsSet** results page is displayed (see Figure 23). If the operation is successful, it gives no return value.

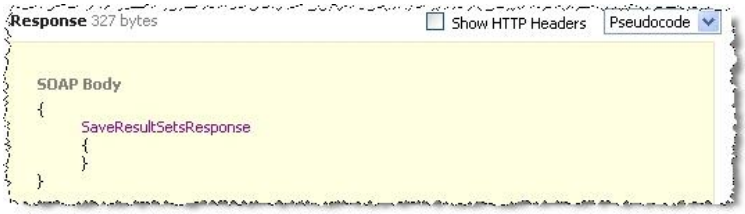

Figure 23. SaveResultsSet Result

3.7 Viewing a Saved Results Set

Working with Saved Results Sets using the ECHO SOAPScope interface almost always requires you to know the name of the Results Set you want to use. There is no way to, for example, select a Results Set from an automatically generated list. You can, however, use the ECHO Webservices API to look up a list of all available saved Results Sets.

> ***Note:*** *Saved Results Sets are only available on a per-user basis. I.e., each user can only see the Results saved while logged into the same account he/she is using.*

How to View a List of Saved Results Sets:

Step	Action	Result
1.	After logging in, select the **CatalogService** by clicking on the item in the Catalog List in the left-hand column of the ECHO SOAPScope Community Interface.	The **CatalogService** details are displayed, providing the list of oprations available through that service (see Figure 7).
2.	Locate the **GetSavedResultSetNames** operation, and click on the **Invoke** button associated.	The pseudocode for the **GetSavedResultSetNames** operation appears, providing text fields for required values (see Figure 23).

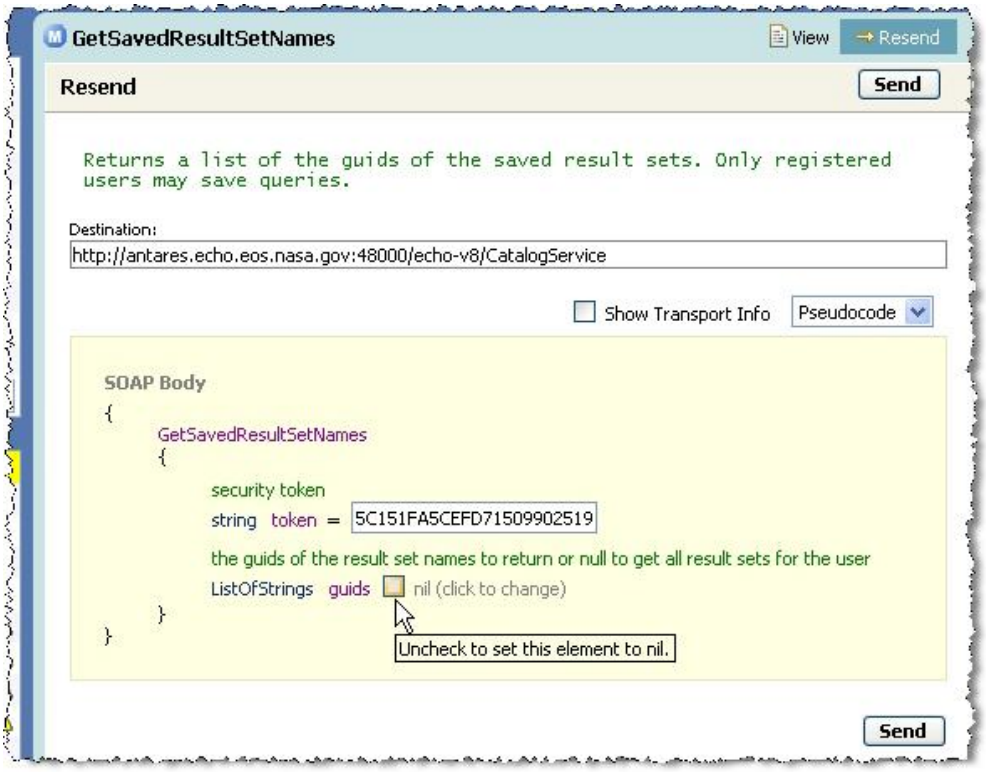

Figure 24. GetSavedResultSetNames Form

Step	Action	Result
3.	Enter the Security Token for this session in the **security token** field.	Refer to Section 2 for help with logging in and identifying your security token.

> ***Note:*** *Make sure there are no leading or following spaces in your security token field. Extra spaces will result in an "invalid token" error.*

4.	"Uncheck" the **guids** checkbox, to retrieve the list of all available Result Sets.	
5.	Click on the **Send** button to submit.	The **GetSavedResultSetNames** results page is displayed (see Figure 22).

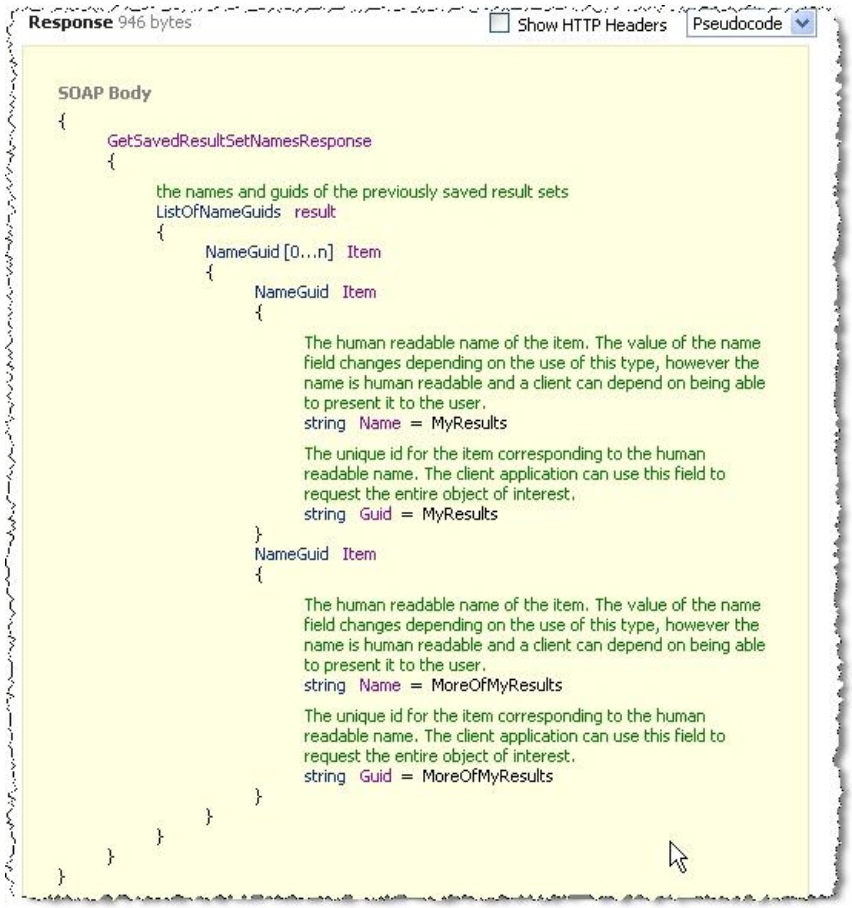

Figure 25. GetSavedResultSetNames Results

Once you know the name of the results set you want to view, you can use the **GetQueryResults** operation to retrieve the saved results set.

How to View a Results Set:

Step	Action	Result
1.	After logging in, select the CatalogService by clicking on the item in the Catalog List in the left-hand column of the ECHO SOAPScope Community Interface.	The CatalogService details are displayed, providing the list of oprations available through that service (see Figure 7).
2.	Locate the GetSavedResultSetNames operation, and click on the Invoke button associated.	The pseudocode for the GetSavedResultSetNames operation appears, providing text fields for required values (see Figure 23).

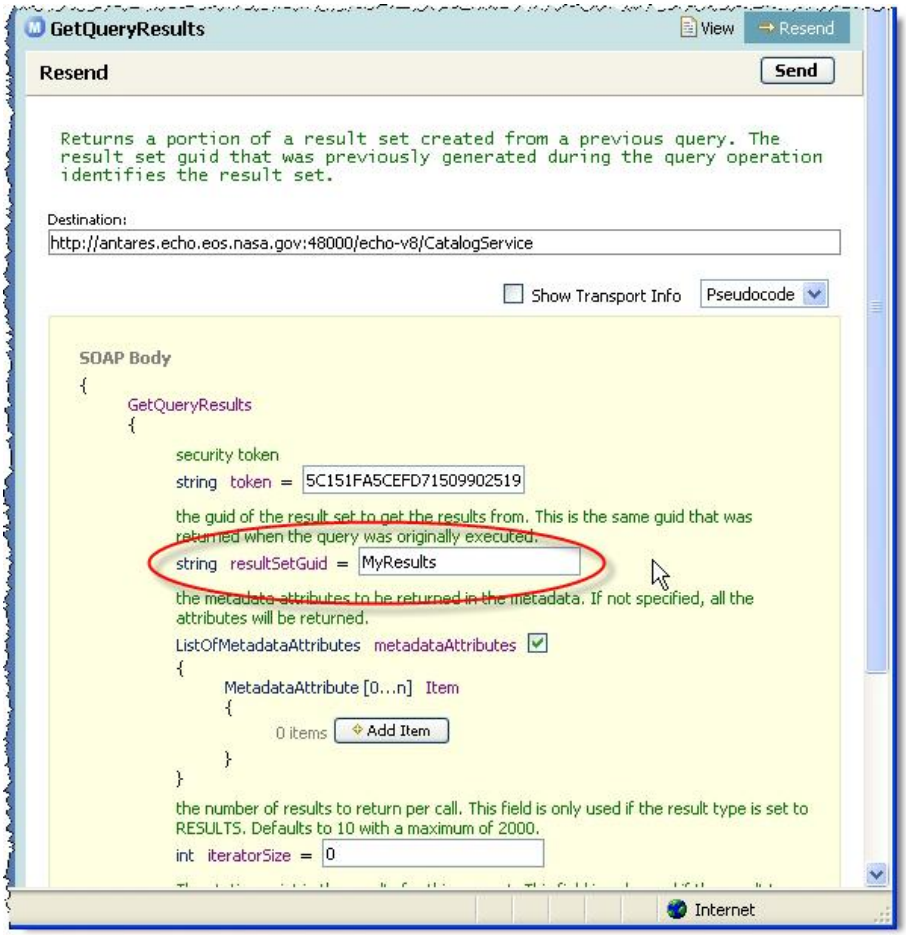

Figure 26. GetQueryResults Form

3.	Enter the Security Token for this session in the **security token** field.	Refer to Section 2 for help with logging in and identifying your security token.

> ***Note:*** *Make sure there are no leading or following spaces in your security token field. Extra spaces will result in an "invalid token" error.*

Step	Action	Result
4.	Enter a name to identify the results set you want to execute in the resultSetGuid text field.	

> ***Tip**: If you don't know the name of the results set you want to execute, use GetSavedResultsSetNames (see above).*

5.	Click on the **Send** button to submit the query.	The **GetQueryResults** results page is displayed (see Figure 27).

Figure 27. GetQueryResults Results